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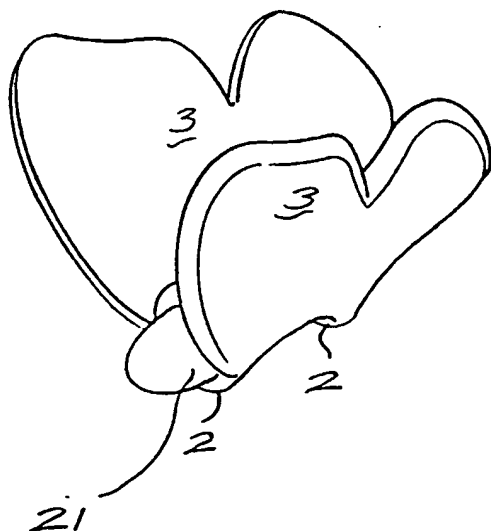
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **NAIL CLIPPERS**



(57) Abstract: The invention provides nail clippers having a pair of jaws (1) shaped to provide oppositely disposed arcuate cutting edges (7, 8) and biased to an open position with a shield (2) extending around and projecting forwardly of the corners (9) of the cutting edges (7, 8). The shield (2) also extends rearwardly from the cutting edges (7, 8) to form manipulating levers (3) for operating the jaws (1). These are aesthetically designed to provide the nail clippers with the appearance of an animate object such as a butterfly, or an inanimate object such as a vehicle.

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NAIL CLIPPERS**FIELD OF THE INVENTION**

10 This invention relates to nail clippers and more particularly to clippers used for manicure and pedicure functions.

BACKGROUND TO THE INVENTION

15 Nail clippers which have a pair of jaws shaped to form sharpened arcuate co-operating cutting edges at one end and connected together at the other with the length of the jaws bent to bias the jaws to an open position have been widely used for many years.

20 An operating lever is hinged to a pin passing through the jaws adjacent the cutting edges to provide means whereby the jaws can be moved together to provide a clipping action.

25 The construction is narrow making the clippers liable to twisting during use. This together with the sharp corners at the ends of the cutting edges can lead to cutting of the flesh around a finger- or toenail being clipped. This is particularly problematic with young children and infants as an adult usually attends to cutting their nails and can misalign their fingers and toes especially when they wriggle about or resist. The latter often results from fear of the implement used.

OBJECT OF THE INVENTION

30 It is the object of the present invention to provide nail clippers which are easy to use and less likely to cause injury when used than those presently available.

SUMMARY OF THE INVENTION

According to this invention there is provided nail clippers comprising a pair of jaws shaped to provide oppositely disposed arcuate cutting edges and joined together remote from the cutting edges, the jaws biased to an open position and movable against the bias to enable a nail located between the cutting edges to be cut, with a shield extending around and projecting forwardly of the corners of the cutting edges.

Further features of this invention provide for forward projection of the shield around the corners to follow an arcuate shape; for the shield to extend rearwardly from the cutting edges to form manipulating levers for operating the jaws and for the jaws to be integrally joined.

The invention also provides for the manipulating levers to the shield to carry protrusions slideably engaging in depressions formed in the jaws, for the shield and manipulating levers to be an integral moulding from resilient plastics materials and for the moulding to be securely retained on the jaws by barbed clips engaged on assembly of the jaws between the extensions.

Preferably the manipulating levers carry protrusions in the form of cams shaped and positioned to direct force in use from the levers against the jaws.

Preferably the extensions will provide wide finger grips and be aesthetically designed. In particular they may take the form of butterfly wings.

Another aspect of this invention provides a pair of jaws with co-operating cutting edges for nail clippers comprising a single strip of material having a cutting edge formed at each end with the strip bent to allow the cutting edges to co-operate and the bend or the material of the strip or both providing a resilient biasing of the jaws to an open position.

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Apertures are preferably provided in the strip, and are sized and shaped to achieve a desired level of resilience in biasing the jaws to an open position.

Still further features of the invention provide for a plug to be movably secured at each side
5 of the jaws adjacent the cutting edges to define together with at least one of the jaws and
the shield a containing space for material cut by the cutting edges in use; for the plugs to
be movable against a bias; for the plugs to be moulded integrally with a flexible body; for
the body to be secured between the jaws intermediate and spaced from the cutting edges;
for each plug to seat against the shield; and for the plugs to be shaped to respectively
10 resemble the head and body of a butterfly.

The invention extends to a pair of jaws and a shield, separately and apart from each
other, each being arranged for use in a novel nail clipper as defined herein.

15 The invention further includes a nail clipper comprising a pair of jaws shaped to provide
oppositely disposed arcuate cutting edges and biased to an open position with moulded
plastics finger grips secured on opposite sides of the jaws.

According to one aspect of the invention there is provided for the finger grips to provide
20 the nail clipper with the appearance of an animate object, including an insect, animal and
plant; for the finger grips to particularly provide the nail clipper with the appearance of a
winged insect, including a butterfly and bee, or with the appearance of a bird.

According to a further aspect of the invention there is provided for the finger grips to
25 provide the nail clipper with the appearance on an inanimate object, including a vehicle.

Further features of this invention provide for the finger grips to be broader than the width
of the jaws; for the finger grips to be securely retained on the jaws by barbed clips; and for
the finger grips to be moulded as an integral unit.

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BRIEF DESCRIPTION OF THE DRAWING

These and other features will become apparent from the following description of an example wherein reference is made to the accompanying drawings in which:

5

Figure 1 shows a perspective view of a set of nail clippers;

Figure 2 shows a perspective view of the clipper jaws;

10

Figure 3 shows a cross section through the clipper set;

Figure 4 shows a front elevation of the clipper set;

Figure 5 shows a rear elevation of the clipper set; and

15

Figure 6 shows a cross section through a further a clipper set.

DETAILED DESCRIPTION OF THE DRAWINGS

20 As illustrated a set of nail clippers consists of a pair of jaws (1) and a shield (2) with integral extensions forming manipulating levers (3).

The jaws (1) are shaped from a single strip (4) of suitable steel plate. The strip (4) is wider at each end (5) and (6) which ends are shaped and sharpened to provide the usual form
25 of co-operating arcuate nail cutting edges (7) and (8). These edges have corners (9).

The strip (4) has a central aperture (10) in the narrower section and is bent centrally at (11) so that the cutting edges (7) and (8) are resiliently biased apart but can be closed together for nail cutting purposes. Stiffening ribs (13) are formed in the strip (4) to provide
30 rigidity between the bend (11) and the wider end sections (5) and (6). The central

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aperture (10) determines the resilience of the jaws (1) and is designed to provide a closing pressure for the jaws which is comfortable to exert.

5 The shield (2) is in the form of a moulding of suitable plastics material and extends around each corner (9) of the jaws (1) while exposing the cutting edges (7) and (8).

10 The shield (2) forms a hinge between the manipulating levers (3) which project away from the cutting edges and over the jaws (1). Inwardly directed protrusions (18) from the manipulating levers (3) slideably engage in depressions (19) formed in the jaws (1).

The manipulating levers (3) provide finger grips for a user to manipulate the jaws 910.

15 The shield (2) generally follows the arcuate shape of the cutting edges (7) and (8) but projects forwardly and laterally of these edges.

20 The manipulating levers (3) are aesthetically shaped so that they resemble the wings of a butterfly and the shield (2) connects the wings in a flared relationship enhancing the resemblance of the assembled nail clippers to a butterfly. The manipulating levers (3) may include reinforcing ribs or other formations to ensure they are sufficiently rigid for use of the clippers.

25 The plastics mouldings of the shield (2) and manipulating levers (3) is such that the jaws (1) can be forced into position where they are retained by the protrusion (18) engaging in the depression (19). The static condition of the moulding and the bent strip (4) are thus such that the components are securely retained together. Preferably barbed clips indicated generally at (20) are provided on the moulding. These clips (20) will enable the jaws (1) to be inserted within the moulding but be prevented from withdrawal without the exertion of sufficient force to break the clips (20). This ensures that the jaws (1) cannot be unintentionally removed from the protection of the moulding.

30

A set of arcuate projections (30) further extends inwardly from each the manipulating levers (3) opposite the shield (2) to abut either side of each of the jaws (1). The projections (30) assist in aligning the jaws (1) within the moulding, particularly during operation of the jaws (1) and also define the limit to which the manipulating levers (3) can be moved together.

It will be appreciated that many design considerations well within the knowledge of those skilled in the manufacture of mouldings and steel pressings will be included in the final design. These will enable the complete nail clippers to combine ease of manipulation with adequate opening and closing of the jaws under predetermined pressure.

In use the manipulating levers (3) are held in position with the cutting edges (7) and (8) over a nail to be trimmed. The shield (2) limits the depth that the nail can be inserted between the jaws (1) by contact of the end of the finger or toe with the shield (92). This also protects the finger or toe against engagement and injury with either corner of THE cutting edges (7) and (8).

Plugs (21, 22) are provided as an optional accessory and are generally conical in shape. The plugs (21,22) are moulded from a resiliently flexible plastics material and are integrally secured together by an elongate ribbed body (23) and a thin stem (24), as shown in the insert to Figure 5. The body (23) extends from a side of each plug (21, 22) and is secured between the jaws(1) intermediate the bend (11) and the projections (30) on the manipulating levers (3). The stem (24) extends from the centre of each plug (21, 22) and between the projections (30) and the shield (2).The plugs (21,22) are thus biased by the body (23) and stem (24) into abutment against the sides of the shield (2) and the projections (30). Together with the shield (2) and jaws (1), the body (23) the plugs (21, 22) provide a containing space for matter entering between the cutting edges (7,8). In use, nail clippings are retained in the space and are collected for later disposal by pulling one of the plugs (21, 22) away from the shield (2) and allowing the clippings to fall out.

In this embodiment the plugs (21, 22) are made in the shape of a butterfly head (21) and body (22), to match the butterfly shape of the extensions.

- 5 Cutting is effected by pressing the manipulating levers (3) towards each other and thus closing the cutting edges (7) and (8) against each other. During this movement the contacting surfaces between the strip (4) and the moulding slide over each other and the plastics material is preferably chosen to be one which provides inherent lubricating properties. The protrusions (18) serve to operate as cam surfaces acting on the depressions (19) in the jaws, to enhance the leverage and reduce the friction between
- 10 jaws (1) and shield (2). The cams also direct the force onto the jaws (1) and centralise it, inhibiting any tendency of the blade to twist. The positioning of the cams can be varied in the length of the extensions to change the direction and magnitude of the leverage applied to the jaws (1).
- 15 The invention provides nail clippers which are safe, easy to use and which may be made aesthetically attractive. It will be appreciated, however, that many other embodiments of nail clippers exist which fall within the scope of the invention, particularly as regards the configuration thereof. For example, it is not necessary to mould the extensions integrally with the shield (2) or even each other. Instead, the shield (2) could form part of the jaw
- 20 (1). Also, the manipulating levers (3) can have any suitable shape and need not be in the form of butterfly wings.

The invention also provides a pair of nail clippers which are made aesthetically appealing by the addition of moulded plastics finger grips on opposite sides of the jaws (1). As

25 illustrated in Figure 6 the nail clippers (100) can be of conventional construction having a pair of jaws (101a, 101b) shaped to form sharpened arcuate co-operating cutting edges (102) at one end (103) and connected together at the other end (104) with the length of the jaws bent to bias the jaws to an open position. An operating lever (105) is hinged to a pin (106) passing through the jaws (101a, 101b) adjacent the cutting edges (102) to

30 provide means whereby the jaws (101a, 101b) can be moved together to provide a clipping action. According to the invention a finger grip (110a) is secured to the lever

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(105) and a further finger grip (110b) to the outer side of the jaw (101b). In this embodiment the finger grips (110a, 110b) are secured to the nail clipper (100) using an adhesive.

- 5 The finger grips (110a, 110b) are identical and similarly shaped to those described above to also provide the nail clippers (100) with the appearance of a butterfly.

By providing the nail clippers with an attractive appearance, such as a butterfly, they have been found to be appealing to children who, as a result, are less likely to struggle when
10 having their nails clipped. It will be appreciated that the finger grips can be made to make the nail clippers resemble any suitable animate or inanimate object. The former includes animals, insects and plants while the latter includes vehicles. Thus, for example, the finger grips could be formed to look like the wings of a bird or bee, or to look like flower petals or leaves, or even to look like a motorcar or train. Preferably the object selected
15 allows an identically shaped finger grip to be depicted.

While it is preferable that the finger grips are wider than the width of the jaws to enhance a user's purchase they may in fact be of similar width to that of the jaws.

CLAIMS

- 5 1. Nail clippers comprising a pair of jaws that are shaped to provide oppositely disposed arcuate cutting edges and are joined together remote from the cutting edges, the jaws being biased to an open position and being movable against the bias to enable cutting of a nail located between the cutting edges, and, a shield extending around and projecting forwardly of the corners of the cutting edges.
- 10 2. Nail clippers as claimed in claim 1 in which the forward projection of the shield around the corners follows an arcuate shape.
- 15 3. Nail clippers as claimed in claim 1 or claim 2 in which the shield extends rearwardly from the cutting edges to form manipulating levers for operating the jaws.
- 20 4. Nail clippers as claimed in claim 3 in which the manipulating levers carry protrusions in the form of cams shaped and positioned to direct force in use from the levers against the jaws.
5. Nail clippers as claimed in claim 4 in which the cams are slidably engaged in depressions formed in the jaws.
- 25 6. Nail clippers as claimed in any one of claims 3 to 5 in which the shield and manipulating levers are an integral moulding of resilient plastics material.
7. Nail clippers as claimed in claim 6 in which the moulding is securely retained on the jaws by barbed clips engaged on assembly of the jaws between the manipulating levers.
- 30 8. Nail clippers as claimed in any one of claims 3 to 7 in which the manipulating levers provide wide finger grips.

- 10 -

9. Nail clippers as claimed in any one of claims 3 to 7 in which the manipulating levers are aesthetically designed.

5 10. Nail clippers as claimed in any one of claims 3 to 8 in which the manipulating levers take the form of butterfly wings.

11. Nail clippers as claimed in any one of the preceding claims in which the jaws are integrally joined.

10 12. Nail clippers as claimed in any one of the preceding claims in which a plug is movably secured at each side of the jaws adjacent the cutting edges to define together with at least one of the jaws and the shield a containing space for material cut by the cutting edges in use.

15 13. Nail clippers as claimed in claim 12 in which the plugs are movable against a bias.

14. Nail clippers as claimed in claim 12 or claim 13 in which the plugs are moulded integrally with a flexible body between the plugs.

20 15. Nail clippers as claimed in claim 12 in which the body is secured between the jaws and spaced away from the cutting edges.

16. Nail clippers as claimed in any one of claims 12 to 15 in which each plug seats against the shield.

25 17. Nail clippers as claimed in claim 16 in which the plugs are shaped to respectively resemble the head and body of a butterfly.

30 18. A pair of jaws with co-operating cutting edges for nail clippers comprising a single strip of material having a cutting edge formed at each end, with the strip bent to

allow the cutting edges to co-operate and at least one of the bend and the material of the strip providing a resilient biasing of the jaws to an open position.

5

19. A pair of jaws as claimed in claim 18 in which at least one aperture is provided in the strip.

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20. A pair of jaws as claimed in claim 19 in which the or each aperture is sized and shaped to achieve a desired level of resilience to bias the jaws to an open position and the material of the strip provides at least part of the resilient biasing.

15

21. A pair of jaws and a shield, separately and apart from each other, each being arranged for use in a novel nail clipper as claimed in any one of claims 1 to 20.

20

22. A nail clipper comprising a pair of jaws that are shaped to provide oppositely disposed arcuate cutting edges and are joined together remote from the cutting edges, the jaws being biased to an open position and being movable against the bias to enable cutting of a nail located between the cutting edges, with moulded identically shaped plastics finger grips secured one on each opposite side of the jaws.

25

23. A nail clipper as claimed in claim 22 in which the finger grips provide the nail clipper with the appearance of an animate object.

24. A nail clipper as claimed in claim 23 in which the finger grips provide the nail clipper with the appearance of an insect.

25. A nail clipper as claimed in claim 24 in which the finger grips provide the nail clipper with the appearance of one of a butterfly and bee.

30

26. A nail clipper as claimed in claim 23 in which the finger grips provide the nail clipper with the appearance of an animal.

27. A nail clipper as claimed in claim 26 in which the finger grips provide the nail clipper with the appearance of a bird.

5 28. A nail clipper as claimed in claim 23 in which the finger grips provide the nail clipper with the appearance of a plant.

29. A nail clipper as claimed in claim 22 in which the finger grips provide the nail clipper with the appearance of an inanimate object.

10 30. A nail clipper as claimed in claim 29 in which the finger grips provide the nail clipper with the appearance of a vehicle.

15 31. A nail clipper as claimed in any one of claims 22 to 30 in which the finger grips are broader than the width of the jaws.

32. A nail clipper as claimed in any one of claims 22 to 31 in which the finger grips are securely retained on the jaws by barbed clips.

20 33. A nail clipper as claimed in any one of claims 22 to 32 in which the finger grips are moulded as an integral unit.

34. A nail clipper as claimed in any one of claims 22 to 33 in which the finger grips form operating levers for the jaws.

25 35. A nail clipper as claimed in any one of claims 22 to 34 in which a plug is movably secured at each side of the jaws adjacent the cutting edges to define together with the jaws a containing space for material entering between the cutting edges.

30

36. Nail clippers as claimed in claim 35 in which the plugs are movable against a bias.

37. Nail clippers as claimed in claim 35 or claim 36 in which the plugs are moulded integrally with a flexible body at opposite ends thereof.

5

38. Nail clippers as claimed in claim 37 in which the body is secured between the jaws.

39. Nail clippers substantially as herein described and as illustrated with reference to any one of Figures 1 to 5 or Figure 6.

10

40. A pair of jaws substantially as herein described and as illustrated with reference to any one of Figures 1 to 5.

15

FIG 1

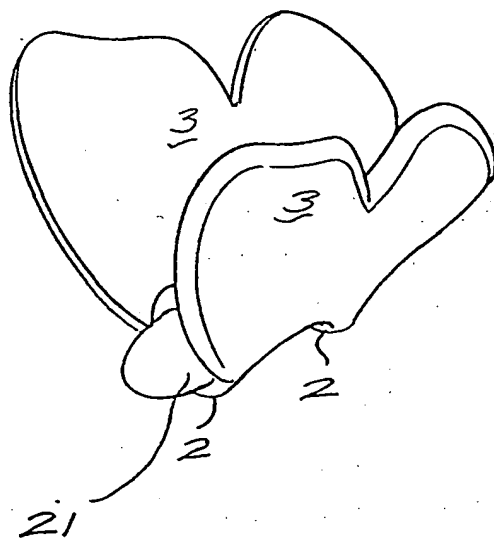


FIG 2

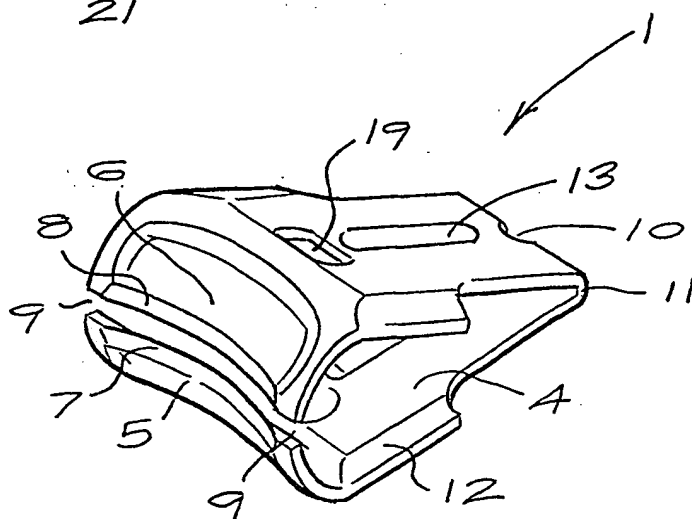


FIG 3

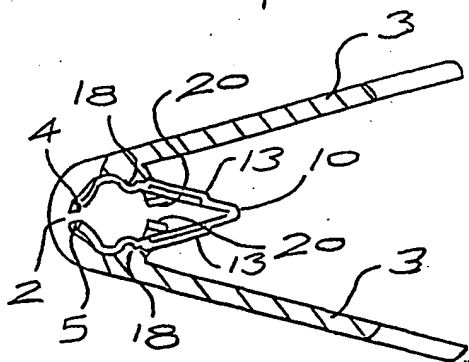


FIG 6

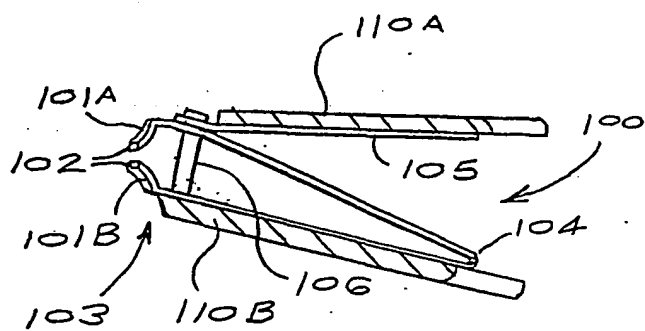


FIG 4

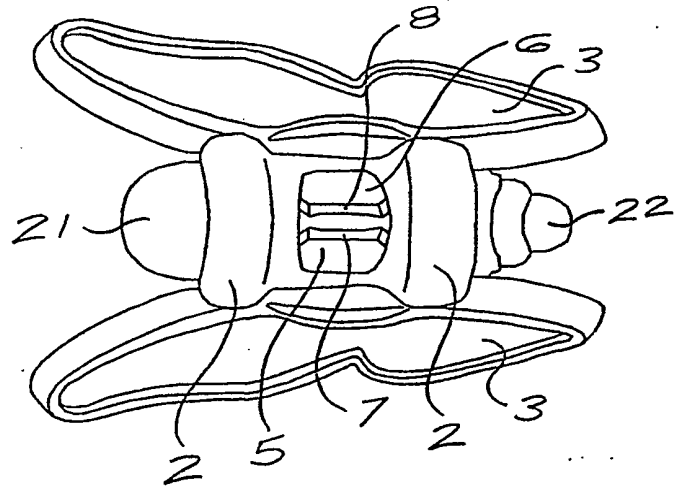
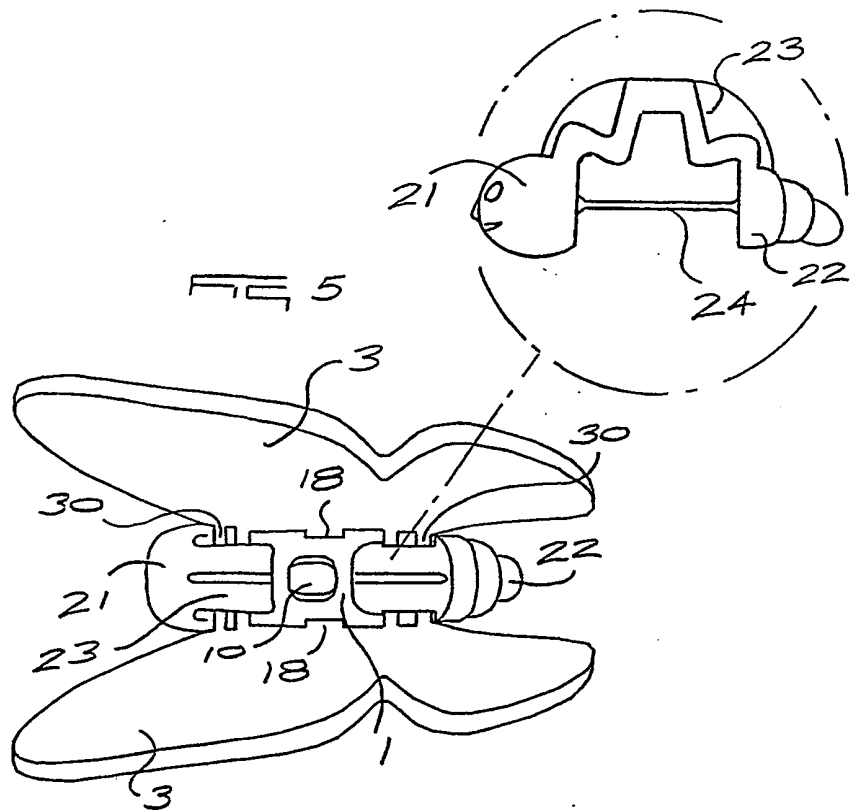


FIG 5



A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 A45D29/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A45D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	page 1, line 1 - line 28; figures 1-3	5, 10
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A	column 1, line 5 - line 35; figure 3	9, 10
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

29 May 2002

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05/06/2002

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>PATENT ABSTRACTS OF JAPAN vol. 015, no. 145 (C-0823), 12 April 1991 (1991-04-12) & JP 03 026205 A (KAIJIRUSHI HAMONO KAIHATSU CENTER:KK), 4 February 1991 (1991-02-04) abstract</p> <p>-----</p>	22-31, 34, 39, 40

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